DRAFT CVPIA Fiscal Year 2013 Annual Work Plan
July 19, 2012

Program Title: Trinity River Restoration Program (TRRP) - CVPIA Section 3406(b)(1) other/ (b)(23)

Responsible Entities

Staff Name	Agency	Role
Robin Schrock	USBR	TRRP Executive Director
Nancy Finley	USFWS	Arcata Field Office Supervisor

The Trinity River Restoration Program (TRRP) was founded in 2000, based on three comprehensive foundational documents: the Trinity River Flow Evaluation Final Report (TRFES; U.S. Fish and Wildlife Service and Hoopa Valley Tribe 1999); the Trinity River Environmental Impact Statement (TREIS/EIR; USFWS et al. 2000); and the Record of Decision (ROD; U.S. Department of the Interior 2000). These documents established a comprehensive science-based adaptive management program to restore the Trinity River's fishery resources.

Program Goals and Objectives for FY 2013

The TRRP is designed to restore the attributes of a healthy, alluvial river system by implementing variable annual instream flows, physical channel rehabilitation, sediment management, and watershed restoration. The Program's overarching goal is to restore anadromous fish populations to pre-dam levels. Fiscal Year 2013 (FY 2013) restoration activities include the continued implementation of the TRRP's restoration strategy. The Program will plan and implement restoration flow releases, construct up to four channel rehabilitation projects, augment coarse sediment, and execute watershed restoration activities to manage fine sediment**.** Annual restoration flow releases will be based on water year type. Channel rehabilitation projects will include a combination of habitat improvement projects that will focus on side channel construction, floodplain lowering, woody debris placement, spawning gravel processing and augmentation, and juvenile fish rearing habitat enhancements. Annual coarse sediment augmentations will be based on water year type, results of past augmentations, and 2-dimensional modeling runs.

In addition to the various restoration actions, 20 activities from the TRRP's Integrated Assessment Plan are proposed under six CVPIA Annual Work Plan categories: Environmental Compliance, Pre-Project Monitoring, Post-Project Monitoring, Monitoring (Programmatic), Research (Evaluations, Studies, Investigations), and Modeling. These activities are generally intended to (1) evaluate long-term progress toward achieving Program goals and objectives; and (2) provide short-term feedback to improve Program management actions by testing key hypotheses and reducing management uncertainties. The activities relate to the influence of restoration actions on fish, wildlife, vegetation and the physical environment.

Status of the Program, 2000 through 2012

Since establishment in 2000, the TRRP has implemented many activities to improve anadromous fisheries habitat. In summary, Program activities include the following:

- Annual releases of restoration flows.
- Construction of 28 channel rehabilitation projects.
- Placement of 55,740 cubic yards of spawning gravel below Lewiston Dam.
- Partnership in many watershed projects.
- Implementation of infrastructure improvement projects to allow release of restoration flows.

The TRRP also collects scientific information to evaluate the influence of restoration actions on the Trinity River.

Implementation of the ROD-defined flow schedules is a cornerstone of the TRRP's outcome based fishery restoration goals. Restoration flows are intended to clean fine sediment from spawning gravels, build gravel/cobble bars that provide juvenile salmonid rearing habitat, scour sand out of pools, provide adequate temperature and habitat conditions for fish and wildlife at different life stages, control riparian vegetation, and perform many other ecological functions. The volumes of water (369,000-815,000 acre-feet and peak releases ranging between 1,500 cfs and 11,000 cfs (cubic feet per second) are based on five water year types (Critically Dry, Dry, Normal, Wet, and Extremely Wet), and collectively are designed to create inter-annual variability that mimics the pre-dam snowmelt driven hydrograph and contributes to the desired healthy river attributes identified in the flow study. The TRRP has made progress toward meeting goals of the Program, although substantial additional effort and time is required to fully achieve performance goals. One of the major objectives of the ROD flows is to flush fine sediment and sand out of the substrate to improve habitat conditions. A recent sediment budget shows that the sand content of the channel bed and banks in the reaches downstream from Lewiston Dam has declined substantially since the 1980s, when dam-related impacts were at a maximum. This reduction in sand content indicates that ROD flows along with watershed restoration are meeting the Program's fine sediment objectives. For the 10 years since the signing of the Record of Decision (WY2001-WY2012) a total of 6.3 million acre feet of ROD water has been released. The river release allocation prior to the ROD was 340,000 acre-feet per year or 3.4 million acre feet for the 10 year pre-ROD period. Therefore, the ROD resulted in an additional 2.9 million acre feet of water being released over the last 10 years. However, there have not been enough instances of each water year type with flows high enough to adequately address the flow related adaptive management requirements of the Program.

Channel rehabilitation projects are designed to create dynamic alluvial river processes that create and maintain fish habitat. When construction of the current sites is complete, the TRRP will have completed more than half of the channel rehabilitation projects. The Program's Scientific Advisory Board (SAB) is completing a comprehensive evaluation of the completed channel rehabilitation projects to inform the remaining efforts. Pre- and post-project monitoring is also being conducted to determine if features and sites function as intended and will be used to plan future sites.

Coarse sediment augmentation is performed to reduce the coarse sediment deficit downstream of Lewiston Dam, promote bed mobility and fluvial dynamics, and increase spawning and rearing habitat availability. A recent sediment budget suggests that the coarse sediment deficit in the 13 river miles downstream from Lewiston Dam has been greatly reduced over the past decade.

In 2012 the TRRP began using project-specific and programmatic monitoring efforts to report several performance indicators. The indicators track many aspects of the river, its ecology, and Program restoration efforts. Findings from the performance indicators are included above (flow accounting, coarse sediment deficit, sand content) and also include:

- Temperature targets to improve spawning success of spring and fall-run Chinook salmon are generally met (indicator name: Temperature Target Performance).
- Increases of Chinook and Coho salmon rearing habitat have been observed at particular channel rehabilitation project sites but not system-wide (indicator name: Chinook and Coho Salmon Rearing Habitat).
- Naturally produced juvenile Chinook salmon abundance appears to have increased steadily from 2007 through 2010 (indicator name: Abundance of Naturally Produced Juvenile Chinook Salmon).
- Escapement of all species over time has been variable with no long term increase detected for

naturally produced spring- and fall-run Chinook, or for naturally produced Coho salmon (indicator name: Spawning Escapement of Naturally Produced Salmonids).
- The mean distance downstream from Lewiston Dam that natural origin Chinook salmon redds are constructed appears to be increasing over time since 2002 (indicator name: Distribution of Natural-Origin Chinook Salmon Spawners).

It is recognized that the Trinity River and associated vegetation, fish, and wildlife system have only had a few years to respond to Program restoration actions. Performance indicators will continue to be updated as information is collected.

Adaptive Management

The Trinity River, like other alluvial river systems, is complex and dynamic. Our understanding of the Trinity River and how it will respond to restoration actions is continually improving. Adaptive Environmental Assessment and Management (AEAM), a fundamental element of the Trinity River restoration strategy, is a systematic approach for improving future management decisions by learning from outcomes of past actions and incorporating new knowledge into management actions.

As an example of the influence of AEAM in the TRRP, the coarse sediment augmentation program has evolved since the Program's foundation. The TRFES suggested an immediate infusion of gravel totaling 16,000 cubic yards was needed immediately below the Lewiston Dam and in the cableway reach. In addition, ranges of augmentation quantities to be added to the river over the long term were specified for each water year type. In 2008, based on an updated analysis using a sediment transport model and in consideration of logistical constraints, the gravel augmentation was revised to use an average rate of augmentation rather than water-year specific rates. A 2010 sediment budget report suggests that long-term deficit has been reduced to near zero, except for immediately below the dam. TRRP staff conduct pre-project modeling and a post-project assessment to guide and evaluate the effectiveness of the coarse sediment augmentation program.

Additionally, our AEAM program has recently guided changes in restoration flow releases. Previous monitoring indicted that the descending limb of the normal hydrograph included in the ROD does not meet riparian objectives for initiation of seedlings on constructed floodplain surfaces. The recession rate was decreased to promote regeneration of riparian vegetation on floodplains which is a component of the restoration strategy as well as part of the riparian mitigation requirement for channel rehabilitation activities. Monitoring is in place to continue assessing the effectiveness of this hydrograph modification.

Finally, as mentioned above, the Program's SAB is completing a comprehensive evaluation of the completed channel rehabilitation projects in the broader geomorphic and hydrologic context of the Program to inform the remaining channel rehabilitation efforts. The results of this evaluation will have application to the Trinity and other managed rivers.

Literature Cited

U.S. Department of the Interior. 2000. Record of Decision, Trinity River Mainstem Fishery Restoration, Final Environmental Impact Statement/Environmental Impact Report. 43 p.

U.S. Fish and Wildlife Service and Hoopa Valley Tribe. 1999. Trinity River Flow Evaluation — Final Report. U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, CA.

U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, Hoopa Valley Tribe, and Trinity County. 2000. Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement / Environmental Impact Report.

Table 1. FY2013 Proposed Activities and Costs

CVPIA Section 3406 (b)(23)/(b)(1)other, Trinity River Restoration Program

	Requested Funding for FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Total Funding	$2,000,000	$14,102,000	$1,980,000	$18,082,000
Reclamation	$2,000,000	$14,102,000	$553,037	$16,655,037
Service	$0	$0	$1,426,963	$1,426,963
CA DFG				$0
CA DWR				$0

1.1	Program Management									
AWP Activity Number	Activity Name	Activity Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
1.1.1	Program Manager, USBR Lead	Management of TRRP program budget, activities, and Reclamation staff. Supervise administrative staff (Secretary and Acquisitions specialist), Monitoring and Analysis (science) staff and Implementation Branch Chief. Provide Executive Director (executive secretary) support to Trinity Management Council (TMC). Provide quarterly Executive Director reports to TMC and Trinity Adaptive Management Working Group, the federal FACA committee under USFWS oversight. Coordinate with USFWS co-lead or their representative on program execution and accountability. Conduct final reviews of all peer reviewed reports and TRRP products for sufficiency. Respond to all public and stakeholder queries and oversee public outreach efforts. Provide Trinity River Division accomplishment reports to Reclamation, and ensure accountability for the TRRP through CVPIA annual work plan and annual report, Reclamation PART, and TRRP annual reports and performance measures. (A30)	BOR	1.00				$248,802		$248,802
1.1.2	USFWS Co-Lead	Participation of Arcata Fish and Wildlife Office Field Supervisor as the co-chair of the Trinity Management Council, as the Designated Federal Official of the Trinity River Adaptive Management Working Group, and in other program management activities. (A1R)	FWS	0.00					$100,000	$100,000

	Program Management, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$248,802	$100,000	$348,802
Reclamation	$0	$248,802	$0	$248,802
Service	$0	$0	$100,000	$100,000
CA DFG				$0
CA DWR				$0

1.2	Program Support									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Funding for Fiscal Year 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
1.2.1	Trinity Management Council	Reclamation and the Service serve as the Secretary of the Interior representatives on the Trinity Management Council. Although the Secretary retains ultimate authority over this program, by the Record of Decision, the Trinity Management Council guides overall implementation of the management actions of the Trinity River Restoration Program (TRRP). Members and alternates of the eight TRRP partner Federal, State, Tribe and local agencies (Reclamation, Service, NOAA, Forest Service, Hoopa Valley Tribe, Yurok Tribe, California Resources Agencies (DWR, CDFG) and Trinity County participate in four quarterly meetings and monthly teleconferences to determine TRRP program direction, activities and policies. (A30)	BOR	0.00				$451,448		$451,448
1.2.2	Technical Assistance to Tribes	Development and maintenance of Tribal capacity to fully and meaningfully participate in the TRRP technical and Adaptive Environmental Assessment and Management (AEAM) activities and the restoration of Trinity River Tribal Trust resources. Funds Tribals participation in TRRP implementation by funding administrative staff, fisheries staff, provides critical safety and technical training, office utility expenses, building maintenance, office supplies and equipment, and other critical non-project-specific operational support expenses. (A30)	BOR	0.00				$606,809		$606,809
1.2.3	Trinity Adaptive Management Working Group	The Trinity Adaptive Management Working Group (TAMWG) is a group of stakeholders providing an opportunity for stakeholders to give policy and management advice about restoration activities to the TMC. The TAMWG is chartered under the Federal Advisory Committee Act (FACA) under the USFWS Designated Federal Officer. TAMWG will hold at least two meetings per year of the full group, involving the public. The technical advisory committees may hold additional meetings with the TAMWG to discuss technical issues, review annual flow schedules, and RFP's for implementation activities. Stakeholders submit alternative hypotheses and/or alternative restoration actions to the TMC for consideration in their capacity as an advisory group. (A1R)	FWS	0.00					$30,000	$30,000
1.2.4	Work Group Participation	Consultants to Tribes: support to attend quarterly meetings of three technical workgroups. (A30)	BOR	0.00				$48,283		$48,283
1.2.5	BOR Administrative Support (Secretary)	Carries out all office administrative duties for the TRRP including office automation, correspondence, timekeeping, and other routine administrative tasks. (A30)	BOR	1.00				$92,997		$92,997

1.2	Program Support									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Funding for Fiscal Year 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
1.2.6	BOR Acquisition Support Specialist	Processes all acquisitions, agreements, contracts for the TRRP and monitors the TRRP budget. (A30)	BOR	1.00				$141,397		$141,397
1.2.7	Other Reclamation Offices	Regional charges to process purchase requests: assessment is based on number of purchase requests, contracts, grants and agreements processed. (A30)	BOR	0.00				$80,000		$80,000
1.2.8	USFWS Staff	Participation of Arcata Fish and Wildlife Office Fisheries and Conservation Partnership Program staff in the Trinity Management Council, in support of the Trinity River Adaptive Management Working Group, and in science program administration. (A1R)	FWS	0.00					$295,108	$295,108
1.2.9	TRRP Management	Responsibilities include implementation of the Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Final EIS/EIR signed December 2000. Program activities are performed under the authority of CVPIA Section 3406(b)(23) for provisions of the ROD associated with implementation of annual instream flows. Other activities not specifically identified in Section 3406(b)(23) are performed under the authority of 3406(b)(1)(other). Budget components for FY2013 include fully burdened personnel costs that include salary plus benefits, plus leave assessment and regional and office indirect overhead. Other budget allocations already reflect regional office indirect overhead and cover office administration and operations (printing, outreach materials), office lease, vehicle lease charges, IT, costs associated with Trinity Management council and Trinity Adaptive Management Working Group activities. (A30)	BOR	0.00				$675,680		$675,680

	Program Support, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$2,096,614	$325,108	$2,421,722
Reclamation	$0	$2,096,614	$0	$2,096,614
Service	$0	$0	$325,108	$325,108
CA DFG				$0
CA DWR				$0

1.3	Technical Support									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
1.3.1	Physical Scientist	Provides physical science support to TRRP: Conducts sediment and geomorphic sampling, analysis and modeling. Prepares reports and scientific publications. (A30)	BOR	1.00				$189,801		$189,801
1.3.2	Natural Resource Specialist	Conducts all compliance and permitting activities for program. Develops, evaluates, and recommends technically defensible strategies, priorities, and tasks, resulting in realistic and achievable schedules and budgets authorized by the TMC, to accomplish the NEPA/CEQA and environmental permitting requirements of implementation components of the program's adaptive environmental assessment and management (AEAM) program. (A30)	BOR	1.00				$195,386		$195,386
1.3.3	Supervisory Civil Engineer	Rehabilitation Implementation Branch Chief/supervisor: Supervises engineering staff, guides development of rehabilitation project design and implementation by coordinating among TRRP partner technical staff, provides technical (engineering) peer review of partner design team products, responsible for implementation of rehabilitation projects. (A30)	BOR	1.00				$184,653		$184,653
1.3.4	Hydraulic Engineer	Provides hydraulic engineering expertise to TRRP: Participates in planning and implementation of restoration flows, analyses and models alternative flow schedules, prepares statements of work for annual assessments, oversees stream gage information, and participates in preparation of annual report and performance measures. (A30)	BOR	1.00				$186,112		$186,112
1.3.5	Fishery Biologist	Provides aquatic ecology and fishery expertise; serves on TRRP Fish Workgroup, provides technical information to TRRP partner staff, analyzes data to prepare annual performance measures reports and annual report, conducts analysis and modeling, contributes to TRRP reports. (A30)	BOR	1.00				$167,651		$167,651
1.3.6	Realty Specialist	Completes all right of access and realty actions necessary to implement 2013 rehabilitation projects, administers up to 25 well grants, prepares and presents project realty/mitigation updates at public meetings, assist TRRP Environmental Specialist with meeting all permit application submission requirements. (A30)	BOR	1.00				$123,427		$123,427
1.3.7	Project Manager	Civil engineering technician serves as project construction manager: plans all construction aspects of rehabilitation projects with design team, prepares construction solicitation packets, coordinates on the ground rehabilitation project construction with contractors and inspectors, ensuring onsite com0pliance with environmental permitting requirements. (A30)	BOR	1.00				$153,283		$153,283
1.3.8	Hydrologic Engineer	Hydrologic engineer support for TRRP: Provides half time support for coordination of temperature and flow modeling and analysis, coordinates with CVO, MP and R&D offices for specific expertise to meet TRRP objectives to meet temperature and flow targets. (A30)	BOR	0.50				$223,931		$223,931
1.3.9	Civil Engineer	Provides civil design engineering expertise for TRRP: Develops rehabilitation projects designs to implement mechanical channel rehabilitation and coarse sediment augmentation actions to achieve completion of planned projects in collaboration with TRRP partner technical staff. (A30)	BOR	1.00				$167,663		$167,663

1.3	Technical Support									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
1.3.10	Realty Specialist	Participation of Arcata Fish and Wildlife Office Fisheries and Conservation Program staff in technical workgroups, workgroup leadership, and data synthesis and reporting. This accounts for 4.25 FTEs. (A1R)	FWS	0.00					$575,287	$575,287

	Technical Support, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$1,591,907	$575,287	$2,167,194
Reclamation	$0	$1,591,907	$0	$1,591,907
Service	$0	$0	$575,287	$575,287
CA DFG				$0
CA DWR				$0

2.1	Pre-Project Study, Research, Reconnaissance									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.1.1	Channel Rehabilitation: Department of Water Resources (DWR) Technical Assistance	Planning and design technical assistance tasks to support channel rehabilitation activities. Tasks include: Hydraulic modeling, design analysis, drawings and report development, cross-sectional surveys, control surveys, bathymetric/hydrographic surveys, topographic design surveys, value engineering studies, design evaluation and review, design team meeting attendance and other data collection activities as necessary. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Engineering design, surveying and HEC-RAS models are completed for planned rehabilitation projects.		$151,850		$151,850
2.1.2	Channel Rehabilitation: Bureau of Land Management (BLM) Technical Assistance and Wood	Planning technical assistance tasks to support channel rehabilitation activities and design initiatives. Tasks include: Development and review of environmental compliance documents, coordination of BLM right-of-ways, facilitation of mining withdrawals/free use permits, design team meeting attendance, project design reviews, and other design and planning related tasks as necessary. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Trees are available to complete the large wood structures in the rehabilitation projects.		$72,000		$72,000

2.1	Pre-Project Study, Research, Reconnaissance									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.1.3	Channel Rehabilitation: Trinity County Department of Transportation (TC DOT) Technical Assistance	Planning and design technical assistance tasks to support channel rehabilitation activities and design initiatives. Tasks include: Technical assistance for review of project designs, review of environmental compliance documents, facilitation and coordination of on-site implementation tasks. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Coordination with non-TRRP resource managers in the Trinity Basin enables completion of planned rehabilitation projects.		$70,000		$70,000
2.1.4	Channel Rehabilitation: US Forest Service (USFS) Technical Assistance	Planning and design technical assistance tasks to support channel rehabilitation activities and design initiatives. Tasks include: Participation on federal design team, assistance in developing specific channel rehabilitation designs, technical assistance for review of partner agency project designs, review of environmental compliance documents, facilitation and coordination of on-site design monitoring. (A30)	BOR	0.00	Annually reduce 10,000-20,000 CY of fine sediment	Collaborative watershed projects that reduce fine sediment inputs to the Trinity River are completed.		$65,317		$65,317
2.1.5	Channel Rehabilitation: United States Geological Survey (USGS) Technical Assistance	Planning and design technical assistance tasks to support channel rehabilitation activities and design initiatives. Tasks include: Review of sampling strategies for mercury at channel rehabilitation project sites, performing on-site sampling, perform off-site laboratory testing and analysis. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Mercury sampling to ensure safe implementation of rehabilitation projects is completed.		$30,000		$30,000
2.1.6	Channel Rehabilitation: Hoopa Valley Tribe (HVT) Implementation Technical Assistance	Planning and design technical assistance tasks to support channel rehabilitation activities and design initiatives. Tasks include: Participation on Hoopa Valley Tribe (HVT) design team, assistance in developing specific channel rehabilitation designs, technical assistance for review of partner agency project designs, review of environmental compliance documents, facilitation and coordination of on-site technical review and recommendations. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Tribes participate fully in implementation of rehabilitation projects.		$40,080		$40,080

2.1	Pre-Project Study, Research, Reconnaissance									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.1.7	Channel Rehabilitation: Yurok Tribe Implementation Technical Assistance	Planning and design technical assistance tasks to support channel rehabilitation activities and design initiatives. Tasks include: Participation on Yurok Tribe design team, assistance in developing specific channel rehabilitation designs, technical assistance for review of partner agency project designs, review of environmental compliance documents, facilitation and coordination of on-site technical review and recommendations. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Tribes participate fully in implementation of rehabilitation projects.		$35,000		$35,000
2.1.8	Potable Water Technical Assistance Program	Well Grant Program to replace potable wells and septic systems of landowners in floodplain for mitigation for those systems affected by Record of Decision restoration flows. (A30)	BOR	0.00	Maintain ROD flows 369-815 TAF	Mitigate for effects of restoration flows on human health and safety.		$150,000		$150,000
2.1.9	Watershed Planning	Conduct watershed assessment by assembling and organizing existing documents and datasets for geospatial analysis at 12-digit HUC level, identify data gaps and needed assessments, develop science based criteria for evaluating and comparing watershed restoration actions, conduct analyses to guide TRRP priority watershed projects, identify priority sub-basins where restoration efforts will be most effective. (A30)	BOR	0.00	Annually reduce 10,000-20,000 CY of fine sediment	Develop basin framework for TRRP watershed efforts to reduce fine sediment		$250,000		$250,000
2.1.10	Remote Sensing	Digital orthorectified aerial photography for the full 42 mile area on the Trinity River; aircraft-based LiDAR terrestrial topography data and true-color aerial photography for the full 42 mile project area; site specific aircraft-based LiDAR; and ground or sonar based terrestrial and bathymetric topographic surveys of the TRRP 42 mile area. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Assess changes in physical habitat of rehabilitation projects.		$400,000		$400,000

	Pre-Project Activities, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$1,264,247	$0	$1,264,247
Reclamation	$0	$1,264,247	$0	$1,264,247
Service	$0	$0	$0	$0
CA DFG				$0
CA DWR				$0

2.3	Outreach and Public Involvement									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.3.1	Public Education and Outreach	Planning technical assistance and support for on-going outreach initiatives around the Trinity River watershed. Outreach tasks includes: Public meeting development and facilitation, briefing papers, map creation, public outreach and education events, general outreach consultation and strategic planning. (A30)	BOR	0.00	n/a	Report on all TRRP activities per partner, stakeholder and public request		$80,000		$80,000

	Outreach and Public Involvement, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$80,000	$0	$80,000
Reclamation	$0	$80,000	$0	$80,000
Service	$0	$0	$0	$0
CA DFG				$0
CA DWR				$0

2.4	Environmental Compliance									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.4.1	Map and quantify riparian vegetation	Map and quantify riparian vegetation	BOR	0.00	Improve the Riparian Corridor	Improve acreage and river miles of riparian corridor		$100,681		$100,681
2.4.2	Riparian and riverine bird monitoring	Riparian and riverine bird monitoring	BOR	0.00	Improve the Riparian Corridor	Improve acreage and river miles of riparian corridor		$44,319		$44,319
2.4.3	Environmental Compliance and Permitting	Develop Environmental Assessments (NEPA/CEQA) to support rehabilitation implementation projects. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Environmental documents and permits complete.		$201,853		$201,853
2.4.4	Mitigation Monitoring Reporting Plan	Develop MMRP Documentation and annual report to support implementation actions. (A30)	BOR	0.00	Improve the Riparian Corridor	Environmental documents and permits complete.		$35,000		$35,000
2.4.5	Native Seed Supply	Harvest and supply of native grass seeds to support restoration projects for mitigation of disturbance or removal of riparian vegetation as required by permitting agencies. (A30)	BOR	0.00	Improve the Riparian Corridor	Improve acreage and river miles of riparian corridor		$20,000		$20,000
2.4.6	Biological Opinion	Develop new Biological Opinion to support Environmental Compliance Documentation (A30)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	Biological Opinion for the Trinity River		$17,000		$17,000

	Environmental Compliance, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$418,853	$0	$418,853
Reclamation	$0	$418,853	$0	$418,853
Service	$0	$0	$0	$0
CA DFG				$0
CA DWR				$0

2.5	Design									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.5.1	Channel Rehabilitation: Design for Mainstem Restoration Project	2013 channel rehabilitation activities will occur at Lorenz Gulch and Douglas City sites. Design development and technical assistance (private consultant) to support channel rehabilitation implementation initiatives. Tasks include: Digital Terrain Model (DTM) – existing/finish ground surface development, Hydraulic modeling, design analyses, drawings and report development, cross-sectional surveys, topographic design surveys, validation surveys for project constraints, participation of value engineering studies, design evaluation and review, design team meeting presentations, etc. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	100% design of planned rehabilitation projects is completed for current year projects and 30 and 50% designs for out year projects.		$95,000		$95,000
2.5.2	Channel Rehabilitation: Design for Mainstem Restoration Project	Design development and technical assistance (tribal governmental organization) to support channel rehabilitation implementation initiatives. Tasks include: Digital Terrain Model (DTM) – existing/finish ground surface development, Hydraulic modeling, design analyses, drawings and report development, cross-sectional surveys, topographic design surveys, validation surveys for project constraints, participation of value engineering studies, design evaluation and review, design team meeting presentations, etc. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	100% design of planned rehabilitation projects is completed for current year projects and 30 and 50% designs for out year projects.		$86,046		$86,046
2.5.3	Design Guide Update	Development of updated chapters for the existing Channel Design Guide manual developed by the Hoopa Valley Tribe. Chapter development may include technical information regarding large wood, side channels, alternative design analysis process, etc. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Design Guide for rehabilitation projects is updated with current TRRP implementation design criteria		$10,800		$10,800
2.5.4	Channel Rehabilitation: Revegetation Design	Revegetation Design to support channel rehabilitation projects. Tasks include: revegetation on-site planning, drawing development, technical memorandum/design report development, plant material quantities, cost estimate, on-site plant identification and marking for salvage or save. (A30)	BOR	0.00	Improve the Riparian Corridor	Improve acreage and river miles of riparian corridor		$70,000		$70,000

2.5	Design									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.5.5	Channel Rehabilitation: Large Wood Design	Large Wood Placement Design to Support Channel Rehabilitation Projects. Tasks include: Digital Terrain Model (DTM) – existing/finish ground surface development, Hydraulic modeling, design analyses, drawings and report development, cross-sectional surveys, topographic design surveys, validation surveys for project constraints, participation of value engineering studies, design evaluation and review, design team meeting presentations, etc. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	Wood structure design for planned projects are completed		$58,548		$58,548
2.5.6	Bucktail Bridge Design	Design development and technical assistance (private consultant) to support critical infrastructure improvements and associated implementation initiatives. Tasks include: Digital Terrain Model (DTM) – existing/finish ground surface development, cost/benefit analysis, hydraulic modeling, design analyses, drawings and report development, participation on bi-weekly conference calls, design evaluation and review, design team meeting presentations, etc (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	TRRP coordinates with Trinity county on Bucktail Bridge design		$95,000		$95,000

	Design, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$415,394	$0	$415,394
Reclamation	$0	$415,394	$0	$415,394
Service	$0	$0	$0	$0
CA DFG				$0
CA DWR				$0

2.6	Pre-Project Monitoring									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.6.1	Channel Rehabilitation: Assessing effects on rearing and spawning habitat	Pre-construction quantification of Chinook and Coho Salmon habitat at future channel rehabilitation site to establish baseline conditions. In the short-term this information is used to help guide project design. Ultimately, this information will also be used to evaluate project performance. (A1R)	FWS	0.00	62,000 Fall-run Chinook Natural Escapement	increase in natural escapement			$106,642	$106,642
2.6.2	Gravel implementation monitoring	Establish baseline physical conditions at future gravel augmentation sites. In the short-term this information is used to help guide project design. Ultimately, this information will also be used to evaluate project performance. (A30)	BOR	0.00	Annually 10,000 CY of coarse sediment	5000 cy coarse gravel used in projects		$21,550		$21,550

2.6	Pre-Project Monitoring									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.6.3	Channel Rehabilitation: Map and quantify riparian vegetation	Map and quantify pre-construction riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at future channel rehabilitation sites to establish baseline conditions. In the short-term this information is used to help guide project design. Ultimately, this information will also be used to evaluate project performance. (A30)	BOR	0.00	Improve the Riparian Corridor	improve acreage and river miles of riparian corridor		$100,681		$100,681
2.6.4	Channel Rehabilitation: Riparian and riverine bird monitoring	Pre-construction riparian bird monitoring at future channel rehabilitation to establish baseline conditions. In the short-term this information is used to help guide project design. Ultimately, this information will also be used to evaluate project performance. (A30)	BOR	0.00	Improve the Riparian Corridor	improve acreage and river miles of riparian corridor		$44,585		$44,585
2.6.5	Channel Evolution Analysis	Morph-dynamic Modeling of Bed/Bank Migration Rates (Pre-Project) to support channel rehabilitation initiatives. Tasks include: On-site technical support to collect in-situ soil samples, detailed hydraulic and sediment transport modeling, report development, etc. (A30)	BOR	0.00	Maintain ROD flows 369-815 TAF	channel changes based on variable flows are modeled to project rehabilitation project performance		$25,000		$25,000

	Pre-Project Monitoring, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$191,816	$106,642	$298,458
Reclamation	$0	$191,816	$0	$191,816
Service	$0	$0	$106,642	$106,642
CA DFG				$0
CA DWR				$0

2.7	Construction/Implementation									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.7.1	Channel Rehabilitation: Mainstem Restoration Projects	Implementation of three large scale channel rehabilitation projects along the mainstem Trinity River. Potential projects include: Lorenz Gulch and Douglas City. Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors. (H37) (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	complete 2 rehabilitation projects	$1,766,667	$1,600,000		$3,366,667
2.7.2	Gravel Processing	Material processing of floodplain terraces to produce appropriate size class of gravels. This product will support gravel augmentation along the Trinity River mainstem during high flow releases in May-April timeframe (A30)	BOR	0.00	Annually 10,000 CY of coarse	process 5000 CY gravel for augmentation		$100,000		$100,000
2.7.3	Gravel Augmentation	On-site gravel augmentation along the Trinity River to promote geomorphic processes and habitat development. Gravel augmentation takes place during high flow events. (A30)	BOR	0.00	Annually 10,000 CY of coarse	augment 5000 CY gravel		$95,405		$95,405
2.7.4	Watershed Restoration Implementation	Funding to support projects to decrease fine sediment contributions to the river to include road decommissioning and culvert replacement. (H37) (A30)	BOR	0.00	Annually reduce 10,000-20,000 CY of fine	complete ~5 watershed restoration projects with partners	$233,333	$266,667		$500,000
2.7.5	Channel Rehabilitation: On-site Construction Inspector	Procurement of on-site inspectors through the Technical Service Center (TSC) Inspection Contract. Inspectors are to support channel rehabilitation work full time during the months of July through December. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	rehabilitation projects pass construction inspections		$308,000		$308,000
2.7.6	Channel Rehabilitation: Large Wood Supply	Supply of large wood to support implementation of channel rehabilitation project sites. Large wood supply includes harvesting, hauling, and stockpiling of large wood materials from strategic upland areas within the Trinity River watershed. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	sufficient large wood is available to construct large wood features of rehabilitation projects		$155,000		$155,000

2.7	Construction/Implementation									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.7.7	Channel Rehabilitation: Construction Equipment	Strategic construction support equipment for implementation actions. Equipment may include safety gear, survey equipment, digital cameras, documentation software, surveillance and monitoring apparatus, laboratory testing, or other types of equipment (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	geologic investigations are conducted to determine siting and implementation approach of rehabilitation projects		$35,000		$35,000
2.7.8	Channel Rehabilitation: Geological Investigations	Perform on-site geological investigations to support channel rehabilitation project sites. Task includes: On-site excavation of soil pits, installation of ground water monitoring wells (piezometers), ground water and soil substrate field mapping, gravel quantity calculations, and geological investigation report including soil test pit descriptions. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	complete 2 rehabilitation projects		$40,000		$40,000
2.7.9	Channel Rehabilitation: Revegetation Implementation	Implementation of revegetation materials at three channel rehabilitation projects along the mainstem Trinity River. Potential projects include: Lorenz Gulch, Douglas City, and Limekiln Gulch. Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors. (A30)	BOR	0.00	Improve the Riparian Corridor	revegetate 19 acres and 1.6 river miles of riparian corridor		$544,084		$544,084
2.7.10	Channel Rehabilitation: Hoopa Valley Tribe (HVT) On-Site Implementation Support	Perform on-site technical assistance for construction support at channel rehabilitation projects. On-site technical discussions regarding changes to the design terrain model, or other associated construction modifications for both informal and formal changes. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	complete 2 rehabilitation projects		$22,332		$22,332

	Construction/Implementation, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$2,000,000	$3,166,488	$0	$5,166,488
Reclamation	$2,000,000	$3,166,488	$0	$5,166,488
Service	$0	$0	$0	$0
CA DFG				$0
CA DWR				$0

2.8	Post-Project Monitoring									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
2.8.1	Channel Rehabilitation: Rehab site effectiveness monitoring and analytical framework	Synthesis of previous channel rehabilitation monitoring and assessment efforts at Upper Junction City and/or Lower Seiner Flat to document the performance of rehabilitation site features compared with their design objectives. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	effectiveness assessment of completed projects		$87,000		$87,000
2.8.2	Assessing effects of restoration on salmon habitat	Quantify post-construction Chinook Salmon and Coho Salmon rearing and spawning habitat at channel rehabilitation sites. Compare pre- and post-construction habitat to help evaluate project performance. (A1R)	FWS	0.00	Complete 47 Channel Rehab. Projects	effectiveness assessment of completed projects			$106,642	$106,642
2.8.3	Gravel implementation monitoring	Post-augmentation physical monitoring activities needed to evaluate the transport and deposition of gravel introduced into the channel via high-flow injection or low-flow placement. (A30)	BOR	0.00	Annually 10,000 CY of coarse	account of gravel augmented		$21,550		$21,550
2.8.4	Channel Rehabilitation: Map and quantify riparian vegetation	Riparian floodplain vegetation monitoring (e.g., species, age-class, initiation success, structural attributes) at channel rehabilitation to document post-construction conditions and evaluate project impact. (A30)	BOR	0.00	Improve the Riparian Corridor	site specific and system wide transects and maps		$100,681		$100,681
2.8.5	Channel Rehabilitation: Riparian and riverine bird monitoring	Riparian bird monitoring at channel rehabilitation to document post-construction conditions and evaluate project impact. (A30)	BOR	0.00	Improve the Riparian Corridor	monitoring avian response to riparian corridor improvement		$44,319		$44,319

	Post-Project Monitoring, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$253,550	$106,642	$360,192
Reclamation	$0	$253,550	$0	$253,550
Service	$0	$0	$106,642	$106,642
CA DFG				$0
CA DWR				$0

3.1	Land or Water Acquisition or Water Conveyance									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
3.1.1	Realty Agreements with Private Landowners	Development of realty agreements to support construction access and alteration of private property during implementation actions. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	complete 2 rehabilitation projects		$60,000		$60,000
3.1.2	Conservation Easement	Development of conservation easements to support construction access and alteration of private property during implementation actions (A30)	BOR	0.00	Complete 47 Channel Rehab.	complete 2 rehabilitation projects		$150,000		$150,000
							Acquisition or Conveyance, FY2013			
							Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
						Subtotal Funding	$0	$210,000	$0	$210,000
						Reclamation	$0	$210,000	$0	$210,000
						Service	$0	$0	$0	$0
						CA DFG				$0
						CA DWR				$0

4.1	Monitoring (Programmatic)									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.1.1	Streamgaging	Stream Gaging network to provide real-time and final, quality controlled data for the Trinity River and tributaries. (A30)	BOR	0.00	Maintain ROD flows 369-815 TAF	develop and implement ROD flow schedule		$210,000		$210,000
4.1.2	Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat	Evaluate the effects of restoration on Chinook Salmon and Coho Salmon habitat at multiple spatial and temporal scales. (A1R)	FWS	0.00	Complete 47 Channel Rehab. Projects	measurement of change in Chinook and coho salmon habitat at different spatial and temporal scales			$106,642	$106,642

4.1	Monitoring (Programmatic)									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.1.3	Adult escapement monitoring program	Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead. Spring and fall Chinook and coho salmon and fall-run steelhead run-size estimation using mark-recapture methods. Includes Trinity River Hatchery Chinook Coded Wire Tagging. (A30)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	adult run size estimate of spring and fall Chinook		$1,000,000		$1,000,000
4.1.4	Salmonid monitoring program	Quantitative assessment of outmigrant juvenile salmonid production in the Trinity River. (A30) (A1R)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	monitoring of all juvenile Chinook and coho salmon and steelhead outmigrants		$195,487	$553,037	$748,524
4.1.5	Chinook salmon spawning survey	Monitor spring and fall Chinook salmon spawning in the mainstem Trinity River. (A30)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	report spring and fall Chinook spawning numbers		$228,706		$228,706
4.1.6	Naturally produced fall Chinook harvest	Monitor harvest of naturally produced fall Chinook. Includes the following fall Chinook harvest monitoring projects: Yurok Tribal Harvest, Hoopa Tribal Harvest, Lower Trinity River Sport Harvest Survey, Lower Klamath River Creel Census. (A30)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	report natural fall Chinook		$394,003		$394,003
4.1.7	Gravel monitoring	Monitoring activities needed to support a comprehensive evaluation of gravel augmentation activities. (A30)	BOR	0.00	Annually 10,000 CY of coarse	report on gravel augmentation		$21,550		$21,550
4.1.8	Map and quantify riparian vegetation	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) system-wide. (A30)	BOR	0.00	Improve the Riparian Corridor	map/quantify changes in riparian vegetation at rehabilitation sites		$100,681		$100,681
4.1.9	Riparian and riverine bird monitoring	Restoration-associated changes in fish abundance and riparian habitat complexity are expected to affect riparian and riverine bird communities on the Trinity River. This project includes a multi-scale, multiple methodology monitoring program designed to track avian response to restoration actions. (A30)	BOR	0.00	Improve the Riparian Corridor	conduct multi-scaled monitoring of avian response to riparian restoration activities		$44,319		$44,319

4.1	Monitoring (Programmatic)									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.1.10	Juvenile salmonid density monitoring	Assess the spatial and temporal distribution and density of juvenile salmonids in the mainstem Trinity River restoration reach, Lewiston Dam to confluence with North Fork Trinity River. (A30)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	assess the distribution and density of juvenile salmonids		$426,509		$426,509
4.1.11	Sediment monitoring	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases. (A30)	BOR	0.00	Annually reduce 10,000-	develop total sediment load estimates		$310,000		$310,000
4.1.12	Geomorphic monitoring and assessment of bed scour and mobility	To address cause and effect relationships between physical processes and riparian vegetation response (A30)	BOR	0.00	Annually 10,000 CY of coarse sediment	address cause and effect between flows and bedload dynamics		$458,317		$458,317
4.1.13	Develop cohort reconstructions	Develop cohort reconstructions for fall Chinook to evaluate cohort performance or year class strength, and population growth rate. Includes age comp project (A30)	BOR	0.00	62,000 Fall-run Chinook Natural Escapement	cohort reconstruction and age composition of fall Chinook		$145,508		$145,508
4.1.14	Expert review	External peer review of investigation plans or reports. (A30)	BOR	0.00	n/a	independent reviews of program plans or reports		$10,000		$10,000

	Monitoring (Programmatic), FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$3,545,080	$659,679	$4,204,759
Reclamation	$0	$3,545,080	$553,037	$4,098,117
Service	$0	$0	$106,642	$106,642
CA DFG				$0
CA DWR				$0

4.2	Research (Evaluations, Studies, Investigations)									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.2.1	Water Year Specific Evaluations	To address water year specific objectives or questions as developed by the Flow workgroup (e.g. additional adult fish health monitoring in critically dry years, additional sediment monitoring in extremely wet years). (A30)	BOR	0.00	Maintain ROD flows 369-815 TAF	develop water year specific hydrograph		$25,000		$25,000
4.2.2	Geomorphic response to high flow duration	This is a one-time project is targeted at informing development of high flow release hydrograph duration recommendations. Ideally, the geomorphic response curves developed under this proposed work would indicate an optimal flow duration that maximizes geomorphic response while using a minimum volume of water. (A30)	BOR	0.00	Maintain ROD flows 369-815 TAF	develop geomorphic[hic flow curve for optimal flow duration with minimal water to effect geomorphic change		$61,500		$61,500
4.2.3	Scientific Advisory Board	Five scientists, recognized as experts in the disciplines of fisheries biology, fluvial geomorphology, hydraulic engineering, hydrology, riparian ecology, wildlife biology, or aquatic ecology, form a Scientific Advisory Board (SAB). They are currently evaluating channel rehabilitation actions. (A30)	BOR	0.00	n/a	evaluate channel rehabilitation actions outcomes for adaptive management input		$140,000		$140,000

	Research, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$226,500	$0	$226,500
Reclamation	$0	$226,500	$0	$226,500
Service	$0	$0	$0	$0
CA DFG				$0
CA DWR				$0

4.3	Modeling									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.3.1	Temperature modeling	Annual Trinity River Division (TRD) operations are reviewed in the context of providing suitable water temperatures in the Trinity River throughout the year. Reservoir and river temperature models use forecast TRD operations, river flow, and meteorology to predict (and evaluate) forecast target water temperature regimes in the Trinity River basin. (A30)	BOR	0.00	Maintain ROD flows 369-815 TAF	compare river temperature at different flows to targets		$7,000		$7,000
4.3.2	Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat	Model the effects of restoration on Chinook Salmon and Coho Salmon habitat at future channel rehabilitation sites to help guide project design. (A1R)	FWS	0.00	Complete 47 Channel Rehab. Projects	assess fish habitat at multiple spatial and temporal scales			$106,642	$106,642
4.3.3	Gravel implementation monitoring	Model the fate of gravel introduced into the channel via high-flow injection or low-flow placement to support the planning and design of future gravel augmentation activities (A30)	BOR	0.00	Annually 10,000 CY of coarse sediment	evaluate transport and deposition of gravel by high flow injection or low flow augmentation		$21,550		$21,550

	Modeling, FY2013			
	Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
Subtotal Funding	$0	$28,550	$106,642	$135,192
Reclamation	$0	$28,550	$0	$28,550
Service	$0	$0	$106,642	$106,642
CA DFG				$0
CA DWR				$0

4.4	Data Management										
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.4.1	Data Management and Maintenance	Serves as data manager for TRRP ensuring QA/QC and metadata for all data. GIS applications of data. (A30)	BOR	1.00	n/a	data management and information transfer		$164,199		$164,199
							Data Management, FY2013			
							Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
						Subtotal Funding	$0	$164,199	$0	$164,199
						Reclamation	$0	$164,199	$0	$164,199
						Service	$0	$0	$0	$0
						CA DFG				$0
						CA DWR				$0

4.5	Adaptive Management									
AWP Activity Number	Activity	Activity Name & Description	Agency		Program Performance Goal	FY2013 Projected Performance	Requested Funding for FY 2013			
			Name	Fractional FTE			Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
4.5.1	Phase I Rehabilitation Project Review/Phase II Recommendations	Scientific Advisory Board (SAB) Review: provides recommendations for further analysis to determine efficacy of the Phase I approaches for implementation in Phase II. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	complete 2 rehabilitation projects		$50,000		$50,000
4.5.2	Programmatic Review of Implementation Activities	Scientific Advisory Board (SAB) Review and analysis of system-wide ROD implementation and monitoring and analysis activities. SAB provides strategic direction and guidance for completion of implementation activities and long-term monitoring and assessment for TRRP. (A30)	BOR	0.00	Complete 47 Channel Rehab. Projects	complete 2 rehabilitation projects		$150,000		$150,000
							Adaptive Management, FY2013			
							Restoration Fund	Water and Related Resources	FWS-Arcata	Total All Sources
						Subtotal Funding	$0	$200,000	$0	$200,000
						Reclamation	$0	$200,000	$0	$200,000
						Service	$0	$0	$0	$0
						CA DFG				$0
						CA DWR				$0

Table 2 – Intentionally left blank

Table 3. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Streamgaging	
Project Description:	Streamgaging network to provide real-time and final, quality controlled flow data for the Trinity River and tributaries.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.1
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Provisional real-time and final quality controlled flow data are available via the USGS website. Final flow data typically becomes available in February for the preceding water year. For select gages, the USGS provides final flow data on Sept. 1 to facilitate sediment transport computations and reporting.
Cost:	$210,000
Questions posed:	Multiple questions associated with other site specific and systemic monitoring efforts and assessments. For example, how do riparian vegetation, aquatic habitat quantity/quality, or sediment routing vary as a function of flow?
Objectives:	Document flows.
Results – expected or actual:	Flow data.
Data collection methods:	USGS streamgage network.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Multiple assessments associated with other site specific and systemic monitoring efforts; for example, assessments of change in riparian vegetation, aquatic habitat quantity/quality, and sediment routing as a function of flow.
Use of information in future decision making:	Data is used for a variety of purposes throughout the Trinity River Restoration Program (hydrology and hydraulic modeling, site design, sediment transport computations, habitat mapping, smolt outmigration, etc.).

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Assessing Effects of Restoration on Chinook Salmon and Coho Salmon Rearing and Spawning Habitat	
Project Description:	Evaluate the effects of restoration on Chinook Salmon and Coho Salmon habitat at multiple spatial and temporal scales.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.2
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Report documenting systemic habitat mapping along with associated data packages.
Cost:	$106,642
Questions posed:	Are restoration actions creating and maintaining rearing and spawning habitat?
Objectives:	Assess changes in the quality and quantity of Chinook Salmon and Coho Salmon Rearing habitat due to program actions system-wide.
Results – expected or actual:	Annual quantification of system-wide change in habitat.
Data collection methods:	Field habitat mapping. Application of guild definitions to delineate areas that meet the specific criteria.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Annual and multi-year assessment of system-wide change in juvenile salmonid rearing habitat
Use of information in future decision making:	Considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Monitor Adult Escapement of Hatchery and Naturally Produced Spring and Fall Chinook, Coho and Fall Steelhead	
Project Description:	Spring and fall Chinook and Coho salmon, fall-run Steelhead adult run-size estimation using mark and recapture methods.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.3
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Annual report documenting the results of the run-size estimation.
Cost:	$1,000,000
Questions posed:	Has the in-river adult salmonid run size shifted with ROD flows? Has escapement changed with rehabilitation or ROD flows?
Objectives:	Monitor influence of rehabilitation efforts on natural and hatchery escapement.
Results – expected or actual:	As conditions in river improve we predict that in river adult salmonid run size, escapement and harvest will increase. Trend analyses over a 10 year period may be used to answer the above questions.
Data collection methods:	Weirs, carcass/redd surveys, sport and tribal harvest surveys, coded wire tagging (CWT) of 25% of hatchery Chinook, 100% marking of hatchery Steelhead and Coho. Scales collected and analyzed.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	In river run size, escapement and harvest numbers for adult Chinook, Coho, and Steelhead. Proportion of hatchery spawners in wild, separation of fall and spring Chinook, separation of different aged Chinook using scales and CWT.
Use of information in future decision making:	Considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Juvenile Salmonid Outmigrant Monitoring Program	
Project Description:	Quantitative assessment of juvenile salmonid production in the Trinity River.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.4
Scope of the monitoring effort:	Trinity River basin to Willow Creek.
Product/deliverable:	Annual final report documenting the result of the monitoring activity.
Cost:	$748,524.00
Questions posed:	Has timing of outmigration and / or peak period of outmigration shifted with ROD flows? Has abundance changed in response to ROD flows or rehabilitation efforts? How has the smolt to adult ratio shifted in response to rehabilitation actions?
Objectives:	To monitor the influence of rehabilitation efforts on smolt production.
Results – expected or actual:	As conditions in river improve we predict that outmigration numbers will increase. Trend analyses over a 10 year period may be used to answer the above questions.
Data collection methods:	Rotary screw traps.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Timing of outmigration, peak period of juvenile salmonid outmigration, estimate of abundance during peak period.
Use of information in future decision making:	Considered annually in flow scheduling. Also considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Mainstem Chinook Salmon Spawning Survey	
Project Description:	Monitor spring and fall Chinook salmon spawning in the mainstem Trinity River.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.5
Scope of the monitoring effort:	Trinity Mainstem, Lewiston Dam to Weitchpec.
Product/deliverable:	Weekly in-season updates and final annual report.
Cost:	$228,706
Questions posed:	We postulate that the spatial distribution of returning spawners (hatchery fish excluded) is influenced not only by the spatial distribution of spawning habitat, but by the distribution of deposited eggs that successfully emerge, rear, and recruit to adulthood. The mainstem spawning distribution of natural origin Trinity River Chinook salmon upstream of the Burnt Ranch Gorge is currently skewed toward Lewiston Dam; the distribution of hatchery origin fish much more so. As the success of redds constructed in the mainstem increases in response to improved rearing habitat conditions, we expect spawning distribution to be driven increasingly by distribution of habitat further down the mainstem, rather than by proximity to the hatchery.
Objectives:	Document anadromous fish response to restoration actions.
Results – expected or actual:	We expect spawning distribution to be driven by distribution of habitat rather than proximity to the hatchery.
Data collection methods:	Redd/Carcass surveys.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Temporal and spatial response of mainstem spawning to restoration through time.
Use of information in future decision making:	Considered annually in channel rehabilitation project design. Also being considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Monitor Harvest of Naturally Produced Fall Chinook	
Project Description:	Includes the following fall Chinook harvest monitoring projects: Yurok Tribal Harvest, Hoopa Tribal Harvest, Lower Trinity River Sport Harvest Survey, Lower Klamath River Creel Census.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.6
Scope of the monitoring effort:	Lower Trinity River, Lower Klamath River.
Product/deliverable:	Data package and annual reports.
Cost:	$394,003.00
Questions posed:	Are Program actions increasing natural production of healthy juvenile salmon and steelhead? Are flows creating conditions necessary for fish survival across life stages?
Objectives:	Gather information to assess the harvest of the Klamath/Trinity fish stocks. This project also allows the tracking of progress toward meeting long-term Trinity River Restoration Program goals as identified in the Integrated Assessment Plan, such as restoring and sustaining natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels.
Results – expected or actual:	Restoration actions will restore and sustain natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels, to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities.
Data collection methods:	Harvest monitoring (varied by partner fishery management objectives).
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	The Tribal harvest numbers, combined with the age composition, and coded wire tag recoveries, can be used to develop a cohort reconstruction for ocean escapement of Trinity River fall Chinook; both hatchery and natural origin fish.
Use of information in future decision making:	Used in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Gravel Implementation and Monitoring	
Project Description:	Monitoring activities needed to support a comprehensive evaluation of gravel augmentation activities.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.7
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Annual report.
Cost:	$21,550
Questions posed:	Where does gravel introduced at specific locations during high flow events get deposited? Does the gravel clear from or deposit in pools?
Objectives:	Guide implementation of the gravel augmentation component of the Program.
Results – expected or actual:	Maps and aerial photography showing regions of deposition and erosion of the bed.
Data collection methods:	Sonar with integrated GPS and aerial photography.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	This project integrates monitoring activities needed to evaluate the transport and deposition of gravel introduced into the channel via high-flow injection or low-flow placement, and to support the planning and design of future gravel augmentation activities. These monitoring activities will also help to evaluate the performance of individual rehabilitation design elements and rehabilitation strategies.
Use of information in future decision making:	Guide implementation of the gravel augmentation component of the Program.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Map and Quantify Riparian Vegetation	
Project Description:	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at channel rehabilitation sites and system-wide.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.8
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Annual report with transect data, project area riparian map, large wood maps, Updated HEC model.
Cost:	$100,681
Questions posed:	Is the riparian community structure sustained or enhanced? How are the vegetation communities within the program area affected?
Objectives:	Monitor influence of restoration actions on riparian vegetation.
Results – expected or actual:	Geomorphic changes will drive changes in riparian vegetation system-wide.
Data collection methods:	Riparian maps of the project area, census of exposed bars with a digitized wet edge, large wood mapping.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Evaluate influence of restoration actions on riparian vegetation.
Use of information in future decision making:	Considered annually in flow scheduling and in channel rehabilitation project design. Also considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Riparian and Riverine Bird Monitoring	
Project Description:	Restoration-associated changes in fish abundance and riparian habitat complexity are expected to affect riparian and riverine bird communities on the Trinity River.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.9
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Annual report.
Cost:	$44,319
Questions posed:	How is the Program affecting bird populations?
Objectives:	Monitor avian response to restoration actions.
Results – expected or actual:	Restoration actions will maintain or enhance wildlife populations.
Data collection methods:	Field surveys, nest monitoring.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Evaluate avian response to restoration actions.
Use of information in future decision making:	Considered annually in channel rehabilitation project design. Also considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Juvenile Salmonid Density Monitoring	
Project Description:	Assess the spatial and temporal distribution and density of juvenile salmonids in the mainstem Trinity River restoration reach, Lewiston Dam to confluence with North Fork Trinity River.
FY 2012 Project Complete?	Not applicable.
CVPIA annual work plan subtask number:	4.1.10
Scope of the monitoring effort:	Mainstem Trinity River, Lewiston Dam to North Fork.
Product/deliverable:	Annual report.
Cost:	$426,509.00
Questions posed:	Is juvenile salmonid density responding to restoration actions? What is the relationship between juvenile salmonid distribution and density to the distribution and abundance of spawning? How do juvenile salmonid distribution and density relate to juvenile outmigration?
Objectives:	Monitor fry density and abundance.
Results – expected or actual:	Fry density will increase as habitat is enhanced.
Data collection methods:	Snorkel surveys.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Assess the spatial and temporal distribution and density of juvenile salmonids in the mainstem Trinity River from Lewiston Dam to the North Fork Trinity confluence.
Use of information in future decision making:	Used in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Sediment Monitoring	
Project Description:	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.11
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Digital database with quality controlled monitoring data and a final report that provides an analysis of the data.
Cost:	$310,000.00
Questions posed:	Have we met our sediment management objectives? Are we adding enough gravel? Are we reducing the total sand storage in the river?
Objectives:	Quantify total load and sediment budget for coarse and fine sediment. Use results to improve our ability to predict sediment transport associated with future high flow releases.
Results – expected or actual:	See deliverables. Data also feeds additional analyses conducted by the restoration program.
Data collection methods:	Synoptic sampling at 4 locations following USGS protocols. Samples collected from a boat mounted crane at temporary cableways.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Sediment transport rates are changing in response to implementation of restoration actions.
Use of information in future decision making:	Information used to plan gravel augmentation projects, improve our ability to predict sediment transport in response to management actions (e.g. high flow releases) and link management actions to program goals.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Geomorphic Monitoring and Assessment of Bed Scour and Mobility	
Project Description:	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.12
Scope of the monitoring effort:	Trinity River mainstem, Lewiston Dam to the North Fork Trinity River.
Product/deliverable:	Annual report.
Cost:	$458,317.00
Questions posed:	Are flow and sediment actions meeting annual objectives for each water year?
Objectives:	Monitor bed mobility and scour thresholds, monitor variability in bed elevations, monitor fine sediment removal/migration from mainstem berms and river banks.
Results – expected or actual:	Flows will mobilize sediment. Sediment mobility will vary based on water year type.
Data collection methods:	Tracer rocks, scour chains, and cross-sections.
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Evaluate bed mobility and scour thresholds, variability in bed elevations, fine sediment removal/migration from mainstem berms and river banks.
Use of information in future decision making:	Considered annually in channel rehabilitation project design and flow scheduling. Also considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Cohort Reconstruction	
Project Description:	Develop cohort reconstructions for fall Chinook to evaluate cohort performance or year class strength, and population growth rate (includes age composition project).
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.13
Scope of the monitoring effort:	Trinity and Klamath Rivers.
Product/deliverable:	Output tables.
Cost:	$145,317
Questions posed:	How are fish populations responding to restoration actions?
Objectives:	To provide insight on the performance of successive cohorts of naturally produced fish as a first step toward analyzing the variability in adult recruitment and parental stock size as it relates to river restoration.
Results – expected or actual:	Restoration actions will restore and sustain natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels, to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities.
Data collection methods:	Dependent on other monitoring efforts (e.g. harvest and escapement).
Data management:	Principal Investigator will provide organized and documented data packages plus final reports for the Trinity River Restoration Program Information Repository; non-sensitive information may be posted to Trinity River Restoration Program's Online Data Portal (http://odp.trrp.net).
Assessment:	Evaluate cohort performance or year class strength, and population growth rate.
Use of information in future decision making:	Considered in the comprehensive evaluation of the influence of restoration actions.

Table 3 continued. Monitoring activities included in the Trinity River Restoration Program Fiscal Year 2013 Annual Work Plan. A total of 14 separate monitoring activities are included.

Expert Review	
Project Description:	External peer review of investigations plans or reports.
FY 2012 Project Complete?	No.
CVPIA annual work plan subtask number:	4.1.14
Scope of the monitoring effort:	All Trinity River Restoration Program efforts are subject to external review.
Product/deliverable:	Report or study plan reviews.
Cost:	$10,000.00
Questions posed:	Are studies using sound scientific methods?
Objectives:	External Peer review of investigation plans or reports.
Results – expected or actual:	Scientifically defensible management recommendations.
Data collection methods:	Surveys of external experts.
Data management:	Review files will be maintained by the Science Program Coordinator.
Assessment:	Review of the field and analytical methods for any Trinity River Restoration Program efforts.
Use of information in future decision making:	Reviews will influence funding decisions.